SYSTEM REQUIREMENTS DOCUMENT (SRD)

FOR

CONTRACT LOGISTICS SUPPORT (CLS)

OF THE

C-5 MAINTENANCE TRAINING DEVICES (MTDs)

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1.0 SCOPE AND PURPOSE

1.1 SCOPE: This System Requirements Document (SRD) establishes minimum requirements for Contract Logistics Support (CLS) for the C-5 Maintenance Training Devices (MTDs), which includes a Training System Support Center (TSSC), all subsystems, computers, peripherals and associated equipment. The primary task under this solicitation is the maintenance of the MTDs, associated technical data and required spares. Priced options for repair of the Travis B&MLG trainer, modification of the hydraulic power system trainer, and listed upgrades are also required. Modifications (both aircraft concurrency and trainer unique) will be required as they become known. (See Attachment 1 for list of MTDs.)

1.1.1 Hydraulic Power System Trainer: Provide a priced option to restore the hydraulic trainer to a functional trainer per 3.2.1.2. The government reserves the right to exercise this option.

1.1.2 Listed Upgrades: Provide priced options to complete listed upgrades per 3.3.4.1. The government reserves the right to exercise these options.

1.1.3 Brake & Main Landing Gear (B&MLG) Trainers: Provide a priced option for analysis and repair to include configuration of the B&MLG trainers per 3.2.1.1. The government reserves the right to exercise this option.

1.2 PURPOSE: The purpose of this program is to provide maintenance and logistics support for the C-5 MTDs, required for training AF personnel in the operation and maintenance of the C-5 weapon system.

2.0 GENERAL BACKGROUND

2.1 GENERAL: The C-5 weapon system is required to have a training capability to support technician/ maintenance initial skills, skill-level advancement and proficiency training. The MTDs support training of maintenance and operations personnel in the maintenance procedures of the C-5. MTD lesson units supplement classroom instruction with the "hands-on" training in organizational on/off equipment maintenance procedures defined in applicable C-5 weapon system Technical Orders (T.O.s).

2.1.1 Program Management Office: Program Management of the C-5 MTD CLS program is the responsibility of OO-ALC/YWA.

2.1.2 Procurement Contracting Officer (PCO): The PCO is the only person authorized to make contractual changes to this contract. In the event the contractor effects any such change, at the direction of any person other than the PCO, the change will be considered to have been made without authority and at the contractors risk.

2.1.3 Administrative Contracting Officer (ACO): The ACO is the individual responsible for the overall administration of the contract.

2.1.4 Project Officer/Quality Assurance Representative (PO/QAR): The PO/QAR is the primary Point of Contact (POC) for the contractor and is responsible for monitoring the quality of contractor performance. The PO/QAR is also responsible for arranging the required government support.

2.1.5 Redirection of Effort: Ensure that redirection of effort, affecting the scope of the contract, does not occur as a result of design reviews, PMRs or technical information exchanges. Any proposed redirection will be reported immediately to the PCO. Redirection of contractor efforts will occur only as directed, in writing, by the PCO.

3.0 CONTRACTOR TASKS OR REQUIREMENTS

3.1 PROGRAM MANAGEMENT: Provide program management, staffing and other resources necessary to meet the requirements of this SRD. Establish and maintain an integrated program management system, incorporating the contractor's Integrated Master Plan (IMP) and Integrated Master Schedule (IMS), to include planning, directing, integrating and controlling the administrative, management, technical, logistical, financial, production and support functions of this contract.

3.1.1 Data Management: Provide data management to include development, preparation, management, submittal and distribution of all contractually required data IAW this SRD. This includes all reports and data, any items listed in the Contract Data Requirements Lists (CDRL), and all reports called for in the Contractor's Statement of Work (CSOW). The government requires reports and data submittals to be in electronic format using software compatible with the government software standard, currently Microsoft Office 2000. Implement and provide a data management plan, a list of data and descriptions of the data.

3.1.2 Associate Contractor Agreements (ACA): ACAs may be required for the purpose of exchanging data, accessing and using third party software and equipment, receiving technical support, working interface issues and/or agreeing on equipment use and time.

3.1.3 Technical Information Exchange: Daily exchanges of working level technical information may be required between the contractor, associate contractors and government agencies. Ensure interchanges of technical information do not interfere with or abrogate the responsibility and authority of the prime contractor to manage and direct subcontractors.

3.1.4 Reviews, Audits, Conferences and Other Meetings: Support all program management reviews, technical reviews, audits, conferences and other meetings, both on-site and off-site, as required. Meetings will include, but not be limited to the following:

3.1.4.1 Program Management Review (PMR): Prepare for and conduct semi-annual PMRs, addressing program progress and schedules with special attention given to actual and/or anticipated problems. The Program Office may request special topics to be briefed, through the PCO. The frequency of these PMRs may be increased to quarterly at the discretion of the Program Office. The Program Office will chair these meetings. PMRs will be held at a site to be determined by the Program Office.

3.1.4.2 Technical Interchange Meetings (TIM): Conduct TIMs, as required, to support the formal exchange of technical information and provide government program management visibility into contractor technical efforts.

3.1.4.3 System Requirements Review (SRR): Prepare for and conduct an SRR to be held at a site to be determined by the Program Office, within 30 calendar days after contract award. The intent of the SRR is to ensure a common understanding of the contract requirements. Discuss the contract requirements line by line in written response. The review will allow any conflicts to be identified and resolved early in the program.

3.1.4.4 Preliminary Design Review (PDR) and Critical Design Review (CDR): Prepare for and conduct Preliminary Design Reviews (PDRs) and Critical Design Reviews (CDRs) when tasked to perform modifications/upgrades. Notify the Program Office, in writing, the time and place of the reviews 30 calendar days prior to the contractor recommended/scheduled dates for each review of the Contract End Item (CEI).

3.1.4.5 Engineering Design Reviews (EDR): EDRs may be required and will be held at a site determined by the Program Office.

3.1.4.6 In Process Reviews (IPR): Support Publications IPRs, to be conducted for modifications effecting Technical Manuals. Additional IPRs may be required based on the contractor's or government's

evaluation of the development process or the criticality/complexity of the material covered. Safety procedures require a 100% IPR.

3.1.4.7 Test Readiness Review (TRR): Prepare for and conduct TRRs as required, prior to the start/restart of each phase of government testing. Notify the Program Office and info 373 TRS/TXD and affected detachments, in writing, within 14 calendar days of the proposed TRR date. The purpose of the TRR is to review and validate the contractor's Statement of Readiness (SOR) and verify that the trainer is ready to begin the applicable test.

3.1.4.8 Functional Configuration Audit (FCA): Prepare for and conduct FCAs as required with government witnesses.

3.1.4.9 Physical Configuration Audit (PCA): Prepare for and conduct PCAs as required with government witnesses.

3.1.4.10 Agenda and Minutes: Provide agendas and minutes for all reviews, conferences, inspections, audits, meetings, etc., conducted for this program.

3.1.5 General Services

3.1.5.1 Maintain the MTD facilities in a neat, clean, orderly, presentable and safe condition. Be responsible for task cleanup of task residue upon completion of each action.

3.1.5.2 Provide all administrative services, commercial telecommunication services, copy and fax machines, computer equipment, furniture, office supplies and all other supplies required for the performance of this contract. The contractor will maintain an inventory of contractor provided equipment and provide a copy to government upon request.

3.1.5.3 Be responsible for costs of all commercial telephone services (other than the use of base telephones for local calls), including rental, relocation, installation and usage charges.

3.1.5.4 Provide all transportation of personnel, parts and equipment necessary to accomplish the requirements of this contract.

3.1.5.5 Provide and retain ownership of basic hand tools typically required by personnel maintaining complex electronic equipment.

3.1.5.6 Special tools and test equipment as required by government approved technical data will be provided by the government IAW the base support agreement.

3.2 CONTRACT LOGISTICS SUPPORT: Provide all levels of maintenance, logistics support and material management for applicable training systems (see attch. 1). Perform regular preventative maintenance and accomplish all repairs as required.

3.2.1 Maintenance: Provide maintenance to correct all discrepancies and malfunctions. Perform all inspections, emergency repairs, cleaning, service, lubrication, replacement of parts, troubleshooting, bench checks, reassembly, adjustments, calibration, and testing. Perform operational checks to correct any malfunction and verify the proper serviceable condition of components, subsystems, or systems of the MTDs and TSSC equipment, IAW government approved technical documentation. All MTD deficiencies and maintenance/repair actions will be documented by the contractor on AFTO Forms 244/245, IAW T.O. 00-20-series tech data, approved by the local PO/QAR and maintained with the applicable trainer.

3.2.1.1 MTD Initial Condition at Contract Award: Perform operational checks and otherwise inspect each training device within 60 days after contract award. Perform an inventory of the training devices,

RSP, spares etc. within 60 days after contract award. A government representative designated by the program office will observe the operational checks/inspections/inventories, and together with the contractor will establish the initial condition of the training devices. Schedule the operational checks/inspections/inventories with the program office as soon as possible after contract award. Complete repair actions on all currently open discrepancies and any discrepancies discovered during the initial operational checks/inspections NLT 210 days after contract award.

3.2.1.2 Brake & Main Landing Gear (B&MLG) Trainers: Verify and correct accuracy of T.O. 43E24-2-7-11-12 against the Dover B&MLG trainer. Compare the B&MLG trainer documentation against the aircraft data, and provide recommendations for differences. The B&MLG trainer at Travis is currently not configured and does not operate like the Dover B&MLG trainer. The Travis B&MLG trainer has a history of failing hydraulic motors and has a temporary modification to allow operation. Analyze current maintenance history, associated documentation, and the B&MLG trainers to determine applicable repair to return to approved configuration (IAW) Air Force T. O. 43E24-2-7-11-12. Provide a priced option for analysis and repair to include configuration of the B&MLG trainers. Complete repair action NLT 270 days after exercise of option. The government reserves the right to exercise this option.

3.2.1.3 Hydraulic Power System Trainers: The hydraulic trainers are currently nonfunctional primarily due to lack of hydraulic power units, and may have missing and inoperative parts. Provide a priced option to restore functionality to the hydraulic trainers IAW T.O. 43E24-2-7-11-13. Complete repair action NLT 270 days after exercise of option. The government reserves the right to exercise this option.

3.2.1.4 The MTDs consist of both C-5 aircraft common and trainer unique components. Aircraft line replaceable units (LRUs) are repaired/supplied within the AF depot maintenance/supply system and will be provided by the government. Remove and replace LRUs as required. These LRUs will be exchanged through base supply for serviceable units on a one-for-one basis. Non-availability of LRUs is an exception as noted in 3.2.8.2. Trainer unique items will be repaired and/or replaced by the contractor. Provide and manage bench stock, and consumable items required for effective maintenance of the trainers.

3.2.1.5 Access to training devices during normal training hours may be granted to perform maintenance or modifications at the discretion of the PO/QAR, or designated government representative.

3.2.2 Preventative Maintenance Inspections (PMI): Schedule and accomplish routine maintenance of the MTDs, to include all computers, peripherals, all associated equipment, and any equipment required in the operation of the TSSC. Ensure the equipment performs equal to or better than the parameters set forth in the technical documentation. Ensure all maintenance actions are accomplished IAW government technical documentation and directives. Coordinate scheduled maintenance/repair actions with the PO/QAR to ensure non-interference with training.

3.2.3 Unscheduled maintenance: Provide unscheduled maintenance as required to support the MTDs. Respond on-site within one hour of notification by the PO/QAR or designated representative of a maintenance requirement.

3.2.3.1 Aircraft line replacement units: Complete repair within 24 cumulative hours of initial notification by removing and replacing LRUs as required. LRUs are repaired/supplied within the AF depot maintenance/supply system and will be provided by the government. These LRUs will be exchanged through base supply for serviceable units on a one-for-one basis. Delays in acquiring aircraft LRUs and other exceptions as noted in 3.2.8.2 will not be included in the 24- hour time to repair.

3.2.3.2 Other stock-listed components: Other stock-listed components--consumables and secondary replacement units--may be ordered through the AF supply system on a fill or kill basis. Completion of repair of filled orders will be IAW aircraft LRUs (Paragraph 3.2.3.1). Completion of repair of killed orders will be IAW trainer unique item repair guidelines (Paragraphs 3.2.3.3, and 3.2.3.4).

3.2.3.3 Trainer unique component repair/replacement (under $5,000): Complete repair/replacement of trainer unique components with a material repair/replacement value under $5,000 within ten working days.

3.2.3.4 Trainer unique component repair/replacement (over $5,000): Identify trainer unique component with material repair/replacement value over $5,000 to the PCO for evaluation/approval by the government. Proceed with repair as directed by the PCO. The government will cover material repair/replacement on a cost-reimbursement basis. Complete repair within 24 hours of receipt of the repair/replacement component.

3.2.4 Maintenance Data Collection (MDC) System: Establish an MDC database in electronic format using software compatible with the government software standard, currently Microsoft Office 2000. Track maintenance/repair requests and investigations through resolution, including but not limited to the following: maintenance activity, spares status, parts consumption. Information shall be provided to the government annually, or as requested from the program office.

3.2.5 Recompetition Support Package (RSP): The government will provide an RSP consisting of spares, engineering drawings, technical documentation, software and software documentation. This RSP may not be sufficient to maintain the MTDs. Manage, maintain, and replenish the RSP at the levels established by the government at contract award. Make recommendations to increase/decrease the RSP as necessary. All spares and support equipment are to be maintained in a serviceable condition and at the same revision level as the installed equipment. Storage space for the RSP will be offered by the government at Travis AFB. If the offered space is insufficient, or if other storage space is required, the contractor is responsible to obtain the storage space off-base. The government retains ownership of the RSP and any additions acquired throughout the performance of this contract. Maintain a master RSP listing, provide a copy to the Program Office annually and when changes are made.

3.2.5.1 Provide and manage bit and piece, and consumable items required for effective maintenance of the trainers and RSP. Associated consumption and cost data for spares, bit, piece, and consumable parts will be included in the MDC database.

3.2.5.2 Replacement parts and materials used for repairs that restore items to a serviceable condition will be equal to or superior to the original and are interchangeable without alteration.

3.2.5.3 Recommendations concerning changes, additions/deletions to the RSP require Program Office approval.

3.2.5.4 Provide preservation, packaging and shipment of all items, as required, using best commercial practices.

3.2.6 Engineering Data Requirements: Develop, maintain and update all data/documentation into the functional, allocated, and product baselines, as required. The baseline data (master engineering drawings) provided by the government will not be construed as the most current, accurate, and complete. Analyze the data provided by the government and make recommendations to correct deficiencies in the product baseline. At the end of this contract or upon termination of this contract, all data will become property of the government. All configuration documentation will be maintained in the electronic format in which it was delivered. Some of the trainers will only have documentation in hard copy and may be incomplete. The contractor may be required to convert this documentation to an electronic format as tasked by the PCO. The contractor will update this documentation (both the master CD ROM and all Air Force copies), as required. The government reserves the right to conduct baseline certifications of trainer equipment, data, and/or documentation at any time during the contract period.

3.2.6.1 Digital Data Capabilities: Plan for and accomplish digital conversion of TDP documents, as negotiated by the PCO.

3.2.7 Electrostatic Discharge (ESD) Control Program: Implement an ESD Control Program. This applies to all trainers, equipment and parts procured, modified or maintained under this contract. The

purpose of this program is to afford protection to those electronic components that can be damaged by ESD. Establish contractor procedures for handling Electrostatic Discharge Sensitive (ESDS) components. The government reserves the right to audit the contractor's ESD control program at any time during the performance of this contract.

3.2.8 Schedules, Exceptions and Disputes

3.2.8.1 Schedule: Support the availability requirements of the MTDs and subsystems, eight (8) duty hours a day, five (5) days per week, fifty (50) weeks per year. Support sixty (60) surge periods of eight (8) hour per period per location per year as directed by the PCO. Trainer availability will not include Federal Holidays.

3.2.8.1.1 Access for other contractors in performance of modifications, maintenance and inspections will be provided during times agreed to by the AF and contractor, as defined in an ACA.

3.2.8.1.2 The PO/QAR will provide a tentative monthly trainer utilization schedule no later than the 25th day of the month preceding the month being scheduled. A finalized weekly schedule will be provided to the contractor, through the PO/QAR, no later than noon Friday preceding the week being scheduled. The government may require changes to the weekly schedule. Provide notification to the PO/QAR or designated representative, whenever the trainer is not available for a scheduled training session.

3.2.8.1.3 Contractor recommended maintenance schedules will be on a non-interference basis and require PO/QAR or designated representative approval.

3.2.8.2 Exception Hours: Exception hours include hours lost due to site power failure, weather, facility failure, non-availability of aircraft LRUs, and site alerts/exercises, beyond the contractor's control, as determined by the PO/QAR.

3.2.8.3 Disputes: In case of a dispute between the contractor and the PO/QAR, regarding trainer availability, complete details of the dispute will be documented by the contractor, and provided to the PCO, who will make the final determination.

3.3 TRAINING SYSTEM SUPPORT CENTER (TSSC): Provide operation and maintenance of a TSSC. Space for a TSSC will be offered by the government at Travis AFB. If the space is deemed insufficient, the contractor is responsible to obtain space for a TSSC off-base. The TSSC will provide a single point of contact for workload management for the MTD program. Provide qualified personnel in sufficient mix of expertise and quantities to support TSSC operation and workload. Services include, configuration management and control, configuration status accounting, technical data management, maintenance, maintenance action reporting, parts repair and management, and maintenance updates and management of the MTD product baseline data and documentation. Services may also include feasibility studies, analyses, database revision, hardware design, hardware development, software/firmware design and development and modifications as directed by the PCO, and will be priced on an individual basis using a pricing arrangement most appropriate to the effort.

3.3.1 Configuration Management: Provide a Configuration Management Plan (CMP) for this program. Identify, within program management, a configuration management organization to perform configuration identification, control, status accounting and audits.

3.3.1.1 Configuration Management Systems: Establish and maintain a Configuration Management system, which does not contain proprietary or non-commercially available components.

3.3.2 Systems Engineering: Establish a disciplined systems engineering technical and management process and effective supply and maintenance procedures to preserve the MTDs operational, safety, suitability, and effectiveness, using AFMCI 63-1201 for guidelines. Perform engineering studies on deficiencies, enhancements, and modifications to the MTDs, as necessary to stay current with the weapon system.

3.3.3 Technology Insertion: Establish and implement a Technology Insertion Program. Identify and evaluate new technologies for potential benefits for the MTDs. The MTDs may require technology insertion due to parts obsolescence, diminishing manufacturing sources or state-of-the-art advances. Technology insertion recommendations may be submitted by the government or the contractor through a TSSC single point of contact, for tracking and status reporting. The Program Office is the approval authority for technology insertion configuration changes. Technology insertion will be considered in-scope of this contract, however, implementation may require a proposal as directed by the PCO.

3.3.4 Modifications/Upgrades: Provide analyses, design, development, integration, kit proof/ installation and testing, and government acceptance for training system modifications/upgrades. Provide modification/upgrade program management, monthly schedule/status reports and data management. The Program Office is the approval authority for all proposed modifications/upgrades to the MTDs. Document, per MIL-DTL-31000 and MIL-STD-100G, the most current government approved engineering baseline of the end-product including support equipment. The baseline documentation will consist of control drawings disclosing existing commercially available items applied in the design, disclosure of all interface requirements between those commercially available items used in the design, and design disclosure drawings for all new assemblies used in the design. Provide a technical proposal based on upgrading the hydraulic power system trainers in 3.3.4.1.

3.3.4.1 Upgrades: Provide priced options to complete the listed upgrades. The government reserves the right to exercise these options. (See Attachment 2 for list of upgrades.)

3.3.4.2 Modifications may be the result of safety issues, reported discrepancies or deficiencies, approved enhancements or weapon system concurrency requirements. Modifications may include upgrades and updates. Modifications may impact software, firmware, hardware and corresponding documentation.

3.3.4.3 Provide support for reviews, audits and conferences, i.e., PMRs, SRR, PDR, CDR, EDRs, TRR, FCA, PCA, and TIMs. Provide agenda and minutes for all modification meetings.

3.3.4.4 Design Criteria and Data: The contractor is solely responsible for acquisition of all source design criteria and data necessary to produce, interface and integrate the modification CEI. The Air Force may assist the contractor in obtaining such data. However, the source data provided will not be construed as the most current, accurate, or complete. The contractor will have full responsibility for obtaining the correct and complete data. The contractor's responsibility for data collection will not be diminished or waived by reason of any government assistance or failure to provide such assistance.

3.3.4.5 Engineering Change Proposals (ECP): Major changes from the approved modification CEI require ECP submission and government approval.

3.3.4.6 Specification Maintenance: Maintain and update all specifications that identify and document the modification CEI using MIL-STD-961D for guidelines. Where appropriate, application of "best commercial practices" or commercial standards will be recommended and will be approved or disapproved, by the Program Office, to be used in lieu of MIL-STD requirements. Once released, all specifications will be maintained under the contractor's configuration management procedures, which provide for incorporation of ECPs and generation of system Specification Change Notices (SCN).

3.3.4.7 CEI Data Requirements: Develop, maintain and update all data/documentation to be incorporated into the functional, allocated and product baselines, as required, as a result of a modification. All data/documentation developed by the contractor (including subcontractors/vendors) as a result of a modification, will be generated with unrestricted rights and will become government property upon completion of the modification(s). Proprietary design or procedures are not permitted.

3.3.4.7.1 Hardware Documentation: Develop/update CEI hardware documentation to include specifications, technical proposals, drawings, technical manuals, firmware documents, test procedures, test plans and provisioning data, if applicable, and integrate into existing documentation.

3.3.4.7.2 Software Documentation: Update all existing software and firmware documentation or generate new/replacement documents, as required, to maintain the product baseline at the latest configuration.

3.3.4.7.3 Technical Data Requirements: The T.O.s will be removed from the Air Force T.O. system after contract award. Provide labels and attach to the cover of each T.O. stating that it is no longer in the Air Force T.O. system. Maintain the T.O.s in the same style and format and renumber them as TMs when revisions are necessary. Provide updates/changes for all technical data affected by any approved change and recommend deletion of outdated technical data caused by modifications.

3.3.4.8 CEI Spares Requirements

3.3.4.8.1 Provide initial spares/support equipment and documentation required to maintain the CEI.

3.3.4.8.2 Modify all spares and support equipment effected by the modification.

3.3.4.8.3 Provide a recommended spare parts list for any additional spares, support equipment and associated data or special test equipment required to be added to the RSP as a result of a modification.

3.3.4.8.4 Update the RSP listing with additions/deletions as a result of a modification.

3.3.4.9 CEI Training: Provide formal support training and training materials for the CEI prior to installation. Provide instructor training prior to performing the ATP. CEI training will not interfere with scheduled training sessions.

3.3.4.10 Other Modifications: Modifications may be accomplished under a separate contract awarded by the government. The modification contractor will be responsible for maintenance of the applicable training system, in areas impacted by the modification only. The condition of the training system will be verified and witnessed by the government before and after the modification installation to ensure the training system is returned to a FMC condition. At completion of the modification, the CLS contractor will submit a proposal for integrating all data/documentation changes into the product baseline and resume maintenance responsibility.

3.3.4.11 Independent Support Contractor: During the performance of this contract, the government may use an independent support contractor, who is neither an agent nor employee of the government. He may monitor and evaluate the progress of the contractor in meeting all contract requirements. When a support contractor is identified, the CLS contract will be amended to include a copy of all necessary data submittals to the support contractor.

3.3.5 Data Requirements: Assume management responsibility for the T.O.s to include incorporation of outstanding changes. The CDRL items comprising the TDP can be categorized as engineering drawings, technical publications (Operation and Maintenance Manuals), and software documentation (Acceptance Test Procedures, Software Product Specifications, etc.). Prepare new and revised engineering drawings IAW contractor's company standards. Update existing technical publications via Technical Manual Page Supplements (TMPS) converted to change pages of existing documents. Prepare all TDP elements developed as change pages in the same style and format as the existing documents.

3.3.5.1 Provide a monthly Contractor's Progress, Status and Management Report. As a minimum, include all maintenance actions; programming or software difficulties; trouble reports, trends for each trainer and any additional items identified in this SRD. Include monthly and fiscal year-to-date breakout of labor activity and lost time, exception hours, and the status of components/spares out for repair.

3.3.6 Data Library: Maintain a current master data library at the TSSC. Maintain a current maintenance data library each site, consisting of Technical Manuals (TMs), publications and documentation developed for the MTDs and other technical data and drawings pertaining to these systems. If additional data is identified to effectively perform the requirements of this contract, the contractor will notify the PO/QAR for government determination as to whether the data should be obtained and placed in the library. Establish a Technical Order Distribution Office (TODO) account, if required. All data in the library will be the property of the Government. Provide a Master Document List (MDL) annually, and when revised/updated, to the Program Office.

3.3.6.1 Recompetition Data Library: Upon recompetition of this contract and/or major modification competition by direction of the Program Office, utilize the Travis data library as a recompetition library for prospective bidders use. This library will be open to prospective bidders five (5) days per week, eight (8) hours per day for a period not to exceed 1 month. The following will be used to establish the recompetition data library:

a. Provide a point of contact, telephone number and building number to the Program Office.

b. Provide appropriate office space with tables, chairs, etc., for prospective bidders use.

c. Schedule all visits by prospective bidders. All contractors will be treated equally, and will be provided the same documents/information upon request.

d. No more than one contractor will be scheduled in the library at any given time.

e. No more than four (4) persons per visit will be allowed in the library at any given time.

f. Contractor visits will not exceed 2 ½ days. The number of visits is not limited, once all requesting parties have been accommodated.

g. Classified or proprietary data will not be provided to any contractor. Only reproduced data will be removed from the data library by any prospective contractors.

i. The data library will be sufficiently manned during operation.

j. The CLS contractor will arrange for a copier. The cost of copies reproduced to prospective contractors will be at fair market value and will be handled between the CLS contractor and the prospective contractors, without increased cost to government.

3.3.6.1.1 A complete set of documentation/data, excluding classified, will be kept in the library. Requests for additional documentation/data, excluding classified, requires approval by the Program Office before inclusion into the library. Additional drawings may be copied on a per request basis through the Program Office.

3.4 TRAINER RELOCATION: A tasking letter from the PCO will be provided in the event relocation becomes necessary for any of the training systems, or subsystem thereof.

3.5 CONTRACT CHANGEOVER/EXPIRATION

3.5.1 Transition of Successor: If the incumbent contractor is an unsuccessful offeror in any subsequent government solicitation for maintenance and logistics support of the MTDs, the contractor will, during the last 90 calendar days of this contract or any extension thereto, provide all reasonable support to the government and the successful offeror to ensure an orderly transition and minimize any impact on operational readiness of the training system. As a minimum, the contractor will provide the successful offeror access to the site and the training system, technical documentation, publications, spares and support equipment on a non-interference/no cost basis during the aforementioned 90 day period.

3.5.2 RSP Support Equipment: Within the last 90 calendar days prior to expiration of this contract, or any extension thereto, the Program Office or its designated representative, will perform an inventory to ascertain

the existence and serviceable condition of these items. The contractor is responsible for supplying any replacements for missing or damaged items (beyond normal wear and tear) at the end of the contract.

3.5.3 RSP Spares: Within the last 90 calendar days prior to expiration of this contract, or any extension thereto, the Program Office will perform an inventory of the spares to ascertain that inventory levels conform to the spares list, as revised during the life of the contract, and that spares are in serviceable condition. The contractor will be responsible for supplying replacements for missing or damaged items at the end of the contract.

3.5.4 Technical Data Package: Within the last 90 calendar days prior to expiration of this contract, or any extension thereto, the Program Office and/or the new contractor, will perform an audit of all technical publications, data and documentation on-site to ascertain that a complete set of documentation exists in usable condition, with the latest revisions incorporated. The contractor will be liable for missing, unusable or outdated documentation at the end of the contract performance period.

3.5.5 Facilities: Upon expiration of this contract, or any extension thereto, the Program Office will perform an inspection of MTD facilities occupied by the contractor, to ascertain the condition of these facilities. The contractor will be liable for damages beyond normal wear and usage at the end of the contract performance period.

3.5.6 Contract Award to the Incumbent: If the incumbent is the successful offeror in any subsequent government solicitation for maintenance and logistics support of the MTDs, the requirements of paragraph 3.5.1 will not apply. In order to verify baseline inventories for the new contract, inventory/audit of support equipment, spares and documentation, and inspection of the MTDs and facilities may be performed at the discretion of the government as indicated in paragraphs 3.5.2, 3.5.3, 3.5.4, and 3.5.5 above.

4.0 SECURITY REQUIREMENTS

4.1 PASS AND IDENTIFICATION: Insure that all contractor personnel obtain passes and identification required by the government. The contractor will work through the PO/QAR to accomplish this requirement. All passes and identification are to be returned by personnel separating from their employment IAW AFFARS 5352.242-9000.

4.2 FACILITY ACCESS AND CONTROL: The contractor will share the responsibility for the security of the dedicated MTD facilities. Control access into and out of the facility and be responsible for securing the facilities whenever last to vacate.

4.2.1 Provide a facility security procedures checklist for each MTD area. The checklist is subject to government approval prior to work beginning.

4.2.2 In case of an actual emergency, the PO/QAR or building custodian may provide access to these areas for emergency personnel, if contractor personnel are not available. The contractor will be notified, as soon as practical, of the existence of an emergency.

4.2.3 Comply with existing government security procedures and the Facility Security Plan at the site.

4.3 PHYSICAL SECURITY

4.3.1 Key Control: Establish and implement procedures of ensuring all keys issued to the contractor, by the government, are not lost or misplaced and are not used by unauthorized persons. Keys issued, by the government, will not be duplicated. Report all occurrences of lost or duplicated keys to the PO/QAR. In the event keys, other than master keys, are lost or duplicated, the contractor will be required, upon direction of the PO/QAR, to re-key or replace the affected lock(s). If the government, at its option, replaces the affected locks or performs re-keying, the total cost incurred will be deducted from the monthly payment due the contractor. In the event a

master key is lost or duplicated, all locks will be replaced by the government and total costs incurred deducted from the monthly payment due the contractor.

4.3.1.1 Combination Control: Establish and implement procedures to ensure all lock combinations are not revealed to unauthorized persons IAW DOD 5200.1-R/AFJI 31-102. Provide all combinations to the PO/QAR.

5.0 QUALITY REQUIREMENTS

5.1 QUALITY: Contractor procedures for maintaining quality in the performance of the tasks of this contract will comply with all quality requirements IAW the Training Systems Acquisition II (TSA II) basic contract. The quality plan/procedures will be made available for Air Force review upon request.

5.2 PRODUCT EVALUATIONS: Establish and implement procedures to store, handle, and deliver project media as stated in IEEE/EIA 12207. Provide a copy of these procedures for Air Force review upon request.

5.3 INSPECTIONS: Establish and implement a quality procedures inspection system using the Training Systems Acquisition II (TSA II) basic contract quality requirements as a guide, within 60 days of contract award. Provide a finalized copy to the PO/QAR and ACO within 30 days after start of contract performance.

5.4 WORK VERIFICATION: Verification of the contractor's work effort (e.g., performance, hours, quality procedures and inspections) will be accomplished by the PO/QAR at the site where the work is being performed during the specified reporting period.

5.5 QAR AUDITS: The contractor will have an audit process in place to periodically verify compliance with all quality requirements IAW the Training Systems Acquisition II (TSA II) basic contract. The Air Force will have the option, on a periodic basis, to perform operational checks of the MTDs and note the operational condition on AFTO Forms 244/245. The contractor will correct any discrepancies annotated on these forms.

5.6 CONSERVATION OF UTILITIES: Instruct all employees in utilities conservation practices and include provisions in the contractor's Quality Control Plan to ensure utilities are conserved. The contractor will be responsible for operating under conditions that preclude the waste of utilities.

6.0 SAFETY

6.1 SAFETY PROGRAM: Accomplish the system safety efforts IAW the Training Systems Acquisition II (TSA II) basic contract. Identify a point of contact within the contractor's program office to interface with the government and ensure accomplishment of system safety requirements.

6.1.1 Analyze all new or changed interfaces for subsystem compatibility. Report any potential category I or II hazards, as defined by military standards, to the Program Office, and incorporate corrective action without additional cost to the government.

6.1.2 Include a clause in all subcontracts to require subcontractors to comply with the safety provision of this contract.

6.2 GOVERNMENT INSTALLATIONS: In performing work on a government installation under this contract, the contractor will comply with specific AFOSH standards developed IAW AFI 91-301/AFMC S1 for government installations, or comply with the applicable safety rules prescribed by the government installation, i.e., OSHA, NFPA and ANSI standards.

6.3 ACCIDENT/INCIDENT REPORTING AND INVESTIGATION: The contractor will report promptly to the PO/QAR & PCO all available facts relating to each instance of damage to government property.

6.3.1 When a major mishap involving government property occurs, the contractor will, IAW AFI 91-202/AFMCS1, immediately secure the accident scene, damaged item or wreckage until released by the accident investigative authority. Such release will be accomplished through the PCO.

6.3.2 If the government elects to conduct an investigation of the accident, the contractor will cooperate fully and assist the government personnel until the investigation is completed.

6.4 HAZARDOUS MATERIALS: The contractor will be responsible for proper disposal of all hazardous waste resulting from the performance of this contract IAW AFMCFARS 5352.223-9000, and host base directives/guide.

7.0 GOVERNEMNT PROPERTY: Manage, control and dispose of government property IAW appropriate Government Furnished Property clauses in the TSAII contract.

8.0 TERMS AND ACRONYMS

8.1 DEFINITION OF TERMS

Administrative Contracting Officer (ACO): The government individual responsible for the overall administration of the contract.

Alignment: The process of adjusting components of a system for proper interrelationship, such as the adjustment of circuits for desired response, the synchronization of components and the physical positioning of components for proper relative distances. Alignments are usually performed within specified tolerances.

Associate Contract Agreement (ACA): Any written agreement between the prime contractor and another contractor.

Bench Check: A visual inspection, physical test and/or functional check using shop facilities, equipment, procedures and/or test parameters set forth in applicable T.O. to determine the exact condition.

Calibration: A comparison between a standard or measurement equipment instrument or items of equipment, one of which is a standard of higher accuracy, to detect, correlate, adjust and report any variation in the accuracy of the instrument or equipment being compared or tested.

Concurrency: The condition of ready for training being achieved on the training need date and the functions and operation of the training system and its supporting equipment and materials must match the supported weapon system.

Configuration: The functional and physical characteristics of existing or planned hardware, firmware, software or a combination thereof as set forth in technical documentation and achieved in a product.

Configuration Control: The systematic proposal, justification, evaluation, coordination, approval or disapproval of proposed changes and the implementation and documentation of all approved changes of the configured item (CI).

Configuration Management Plan (CMP): The document defining how configuration management will be implemented (including policies and procedures) for a particular acquisition or program.

Configuration Status Accounting (CSA): The recording and reporting of information needed to manage configuration items effectively.

Contract End Item (CEI): The CEI consists of the hardware, software, firmware and documentation required to produce a configured item.

Contract Logistics Support (CLS): A preplanned method used to provide all or part of the logistics support for a system, subsystem, modification or equipment throughout its entire life cycle. CLS covers depot level maintenance, organizational and intermediate level maintenance, software support and other operation and maintenance tasks.

Data: Recorded information, regardless of form or method of the recording.

Deficiencies: An inadequate or erroneous condition in hardware, software, firmware, technical publications, engineering drawings, etc., that limits or prevents use of material or trainers for the operational need, planned capability or purpose intended.

Design Baseline: The baseline (hardware, firmware and software) as reflected in technical documentation (specifications, drawings, software/firmware descriptions), at completion of CDR.

Disassemble: Teardown of an item or parts sufficient to permit the type and amount of inspection and/or work required.

Downtime: That portion of scheduled training time when the trainer is not operationally ready.

Engineering Change Proposal (ECP): A proposed engineering change and the documentation by which the change is described, justified and submitted to the government for approval or disapproval.

Functional Configuration Audit (FCA): The formal examination of functional characteristics of a configuration item, prior to acceptance, to verify that the item has achieved the requirements specified in its functional and allocated configuration documentation.

Government Furnished Equipment (GFE): All government owned equipment delivered or otherwise made available, to a contractor which may be incorporated into, attached to, consumed or expended during production of end items or in the performance of contracted maintenance.

Government Furnished Material (GFM): Material owned by the government and may be incorporated into or attached to an end item to be delivered under a contract or which may be consumed in the performance of a contract. Consists of, but not limited to, raw, processed material, parts, components, assemblies and small tools and supplies.

Government Furnished Property (GFP): Property in the possession of the government and delivered to or made available to the contractor.

Inspect or Check: An examination of an item to determine identity, condition and/or proper installation.

Line replaceable unit (LRU): An essential support item removed and replaced at field level to restore an end item to an operationally ready condition.

Modification: A configuration change to a produced configured item. A configuration change involves alteration of the form, fit or function of the item, changing its physical or functional characteristics.

NON-RSP Spares: Material provided to the contractor that does not require replenishment.

Off-Equipment Repair: That repair of items within the contractor's on-site repair capability that have been removed from the trainer.

On-Equipment Repair: That repair of items within the contractor's on-site repair capability that have not been removed from the trainer.

Operational Check: A functional test of an accessory component or system, accomplished in its installed environment to ensure proper installation and operation.

Part: A component, accessory, assembly, subassembly or module contained within an end item.

Procurement Contracting Officer (PCO): The government individual authorized to enter into contracts on behalf of the government.

Product Baseline (PB): The initially approved documentation describing all of the necessary functional and physical characteristics of the configuration item and the selected functional and physical characteristics designated for production acceptance testing and tests necessary for support of the configuration item. In addition to the documentation, the product baseline of a configuration item consists of the actual equipment and software.

Physical Configuration Audit (PCA): The formal examination of the "as-built" configuration of a configured item against its technical documentation to establish or verify the configuration item's product baseline.

Prototype: The initial development unit. This includes all necessary engineering and software/firmware development required to produce and test the unit.

Recompetition Support Package (RSP): Spares, support equipment and data required to maintain and operate the MTDs. Ensure the competitive environment necessary to recompete this workload. This package will consist of all data required to operate and maintain the MTDs. It will also include spares and SE that fit the following qualifications: High cost, long lead-time and trainer peculiar.

Statement of Readiness (SOR): The SOR certifies that the contractor has met the criteria required to begin the proposed phase of test activity.

Surge: The ability to meet increased requirements by adding time to the training window. To be accomplished by expanding the training window in eight (8) hour increments on regular training days or weekends.

System Engineering: System engineering is both a technical and management process. It is a discipline that ties together all aspects of a program to ensure that the individual parts assemblies, subsystems, support equipment and associated operational equipment will effectively function as intended in the operational environment. It also is a logical sequence of activities and decisions transforming an operational need into a description of system performance parameters as well as a preferred system configuration.

Technical Data: Technical Orders, technical manuals, maintenance manuals, documentation, data and engineering data.

Technology Insertion: The intentional, incremental insertion of newer technology to improve reliability and maintainability, reduce cost, and/or add minor performance enhancement, typically in conjunction with depot or field level maintenance. Technology insertion that significantly changes the performance envelop of the end item is considered a modification and is excluded from this definition.

Training System: A systematically developed curriculum including, but not necessarily limited to, courseware, classroom aids, training simulators and devices, operational equipment, embedded training capability and personnel to operate, maintain or employ a system. Training systems include all necessary elements of logistics support.

Training System Support Center (TSSC): A TSSC is a composite capability consisting of hardware/ software personnel, or other resources, as required, to accomplish product baseline control/maintenance, software modification/maintenance, hardware modification development, configuration status accounting and update/maintenance of technical/engineering documentation.

8.2 ACRONYMS

ACA	Associate Contract Agreement
ACO	Administrative Contracting Officer
AF	Air Force
AFB	Air Force Base
AFI	Air Force Instruction
AFMCI	Air Force Materiel Command Instruction
AFOSH	Air Force Occupational Safety & Health
ATP	Acceptance Test Procedure
CDRL	Contract Data Requirements List
CEI	Contract End Item
CLS	Contract Logistics Support
ECP	Engineering Change Proposal
EDR	Engineering Design Review
EIA	Electronics Industries Association
ESD	Electrostatic Discharge
ESDS	Electrostatic Discharge Sensitive
FAR	Federal Acquisition Regulation
FCA	Functional Configuration Audit
FMC	Fully Mission Capability
GFE	Government Furnished Equipment
GFM	Government Furnished Material
GFP	Government Furnished Property
IAW	In Accordance With
IEEE	Institute of Electrical and Electronics Engineers
IMP	Integrated Master Plan
IMS	Integrated Master Schedule
IPR	In-Process Review
LRU	Line Replaceable Unit
MDC	Maintenance Data Collection
MTD	Maintenance Training Device
PCA	Physical Configuration Audit
PDR	Preliminary Design Review.
PM	Program Management
PMR	Program Management Review

PO	Project Officer
QA	Quality Assurance
QAR	Quality Assurance Representative.
RSP	Recompetition Support Package.
SCN	Specification Change Notice.
SOR	Statement of Readiness
SRD	System Requirements Document
SRR	System Requirements Review
STD	Standard
TDP	Technical Data Package
TIM	Technical Interchange Meeting
TM	Technical Manual
T.O.	Technical Order
TRR	Test Readiness Review
TSSC	Training System Support Center
USAF	United States Air Force

Attachment 1 List of MTDs

Air Cond & Press Sys/Windshield Heat System		25	A/E37U-T12	6910-00-927-1878	10018A000-101	63240001	1		
Air Cond & Press Sys/Windshield Heat System		25	A/E37U-T12	6910-00-927-1878	10018A000-101	63240002		1	
Automatic Flight Control System	AFCS	1	A/E37A-T24	6910-00-889-9986	10001A100-101	63100001	1		Support through Dec 2002
Automatic Flight Control System	AFCS	1	A/E37A-T24	6910-00-889-9986	10001A100-101	63100002		1	Support through Jun 2002
Auxiliary Power Unit	APU	37	A/E47A-T1	6910-00-888-9677	10026A000-101	63320001	1		
Auxiliary Power Unit	APU	37	A/E47A-T1	6910-00-888-9677	10026A000-101	63320002		1	
Bendix Color Radar				6910L200226J		37850022		1	Support through April 2002
Bendix Color Radar							0		
Brake & Main Landing Gear System	B&ML G	20	A/E42A-T9	6910-00-888-9682	10014A0000-101	63200003	1		
Brake & Main Landing Gear System	B&ML G	20	A/E42A-T9	6910-00-888-9682	10014A0000-101	63200002		1	
Cargo Doors & Ramp System	CD&R	28	A/E42A-T1	6930-00-928-9903	10020A000-101	63260001	1		
Cargo Doors & Ramp System	CD&R	28	A/E42A-T1	6930-00-928-9903	10020A000-101	63260002		1	
Communication, Navigation & Identification	CNI				A0229482001-10		1		Support through May 2003

Communication, Navigation & Identification	CNI				A0229482001-10			1	Support through June 2002
Direction Finder Ser		38		6910-00-888-9679	10027A000-101	63330001	1		Support through May 2003
Direction Finder Ser		38		6910-00-888-9679	10027A000-101	63330002		1	Support through June 2002
Electrical System Trainer	ECS	24	A/E24A-T21	6910-00-890-3900	10017A000-101	36790001	1		
Electrical System Trainer	ECS	24	A/E24A-T21	6910-00-890-3900	10017A000-101	36790002		1	
Engine System Trainer		39	A/E42A-T7	6910-00-888-9691	10028A000-101	C5A00039		1	
Engine System Trainer							0		
Fire Suppression System Trainer		7		6910-00-888-9676	10006A000-101	63150001	1		
Fire Suppression System Trainer		7		6910-00-888-9676	10006A000-101	63150002		1	
Flight Control (Surface) System Trainer		29		6910-00-109-9299	10021A000-101	63270001	1		
Flight Control (Surface) System Trainer		29		6910-00-109-9299	10021A000-101	63270002		1	
Fuel Quantity System Trainer		2	A/E37A-T25	6910-00-894-9276	10002A000-101	63110001	1		
Fuel Quantity System Trainer		2	A/E37A-T25	6910-00-894-9276	10002A000-101	63110002		1	
Fuel Savings Advisory System/Inertial Navigation System	FIT	49	A/E24M-T5	6930-01-307-5118	821-0000000-1	74120001	1		Support through May 2003
Fuel Savings Advisory System/Inertial Navigation System	FIT	49	A/E24M-T5	6930-01-307-5118	821-0000000-1	74120002		1	Support through June 2002

Fuel System Trainer		3	A/E37A-T26	6910-00-922-4239	10003A000-101	63120001	1	
Fuel System Trainer		3	A/E37A-T26	6910-00-922-4239	10003A000-101	63120002		1
Hydraulic Power System Trainer		21	A/E27A-T3	6910-00-927-1877	10015A000-101	63210001	1	
Hydraulic Power System Trainer		21	A/E27A-T3	6910-00-927-1877	10015A000-101	63210002		1
Inflight Refueling Receptacle System Trainer		47		6910-01-212-8779	900000002-009	74100001	1	
Inflight Refueling Receptacle System Trainer		47		6910-01-212-8779	900000002-009	74100002		1
Instrument/Flight Director System Trainer		42	A/E24A-T22	6930-00-889-9988	10030A000-101	63350001	1	Support through May 2003
Instrument/Flight Director System Trainer		42	A/E24A-T22	6930-00-889-9988	10030A000-101	63350002		1 Support through June 2002
Integrated System Trainer	IST	51		6930-01-290-5936	8721AC00000-1	74390001	1	
Integrated System Trainer	IST	51		6930-01-290-5936	8721AC00000-1	74390002		1
Liaison Radio Communication System Trainer		4		6910-00-890-0109	10004A000-101	63130001	1	Support through May 2003
Liaison Radio Communication System Trainer		4		6910-00-890-0109	10004A000-101	63130002		1 Support through June 2002
Malfunction, Detection, Analysis & Recording System Trainer	MADA RTS II	48A	A/E24M-T4	6930-01-307-5289	2000000	74110001	1	

Malfunction, Detection, Analysis & Recording System Trainer	MADA RTS II	48A	A/E24M-T4	6930-01-307-5289	2000000	74110002		1	
Malfunction, Detection, Analysis & Recording System Trainer	MADA RTS II	48A	A/E24M-T4	6930-01-307-5289	2000000	74110003	1		
Malfunction, Detection, Analysis & Recording System Trainer	MADA RTS II	48A	A/E24M-T4	6930-01-307-5289	2000000	74110004		1	
Nose Landing Gear & Steering System Trainer	NLG	23	A/E42A-T8	6910-00-890-3899	10016A000-101	63220001	1		
Nose Landing Gear & Steering System Trainer	NLG	23	A/E42A-T8	6910-00-890-3899	10016A000-101	63220002		1	
Oxygen System Trainer		27	A/E26S-T1	6910-00-888-9685		63250001	1		
Oxygen System Trainer		27	A/E26S-T1	6910-00-888-9685		63250002		1	
Radar ALT APN-10		34	A/N APN-T10	6910-00-888-9681	10025A000-101	63310001	1		Support through May 2003
Radar ALT APN-10		34	A/N APN-T10	6910-00-888-9681	10025A000-101	63310002		1	Support through June 2002
Thrust Reverser System Trainer		17	A/E42U-T2	6910-00-890-8544	10012A000-101	36780001	1		
Total							[redacted]		

Total Types of Fielded Trainers = 25.

Total Number of Fielded Trainers = 49

Attachment 2 C-5 Maintenance Trainer Upgrades

1. Nose Landing Gear (NLG) and Steering Trainer Upgrade
   - Crosswind system. Delete simulation of the crosswind system. TCTO 1C-5A-1978 (deletes the crosswind system) has not been implemented on the trainers.
   - Door support structures. On the Travis AFB trainer, identify cause of failure of the existing repairs and upgrade door support structures accordingly.
   - Folding bulkhead strut. Add a folding bulkhead strut to provide the capability to teach reconfiguring the folding bulkhead strut prior to performing level kneel or truck bed kneel operations. Prior to performing level kneel or truck bed kneel operations on the aircraft, maintenance personnel must reconfigure the folding bulkhead.
   -
   - Instructor Malfunction Panel. Add an Instructor Malfunction Panel allowing flexibility and realism. Instructors are limited to minor malfunctions. Malfunction Panel will reduce wear and tear from instructors having to physically input malfunctions. The added malfunctions will not exceed 20. The following malfunctions are required:

     Nose Landing Gear (NLG) will not retract.
     NLG will not extend.
     NLG doors will not close.
     NLG remains "Red Wheels" after extension.
     NLG remains "Barber Poles" after retraction.
     NLG door will not lock after closing.
     NLG door will not open.
     Rudder pedal steering will not disengage during control wheel inputs.
     Rudder pedal steering will not operate.
     NLG will not kneel.
     NLG will not unkneel.
     NLG kneel light will not illuminate with NLG fully kneeled.

2. Air Conditioning and Pressurization Trainer Upgrade
   - Compressor Discharge Overheat Switch and Low Limit Control Sensor (Panel 1). Implement TCTO 1C-5A-1996 by relocating components on the animated panel.
   - Rain Repellent System (Panel 3). Remove the rain repellent system from Panel 3 of the trainer for concurrency with C-5B aircraft.
   - Animated Panel flow simulation, annunciation light indications and valve actuations (Panel 1 and 2). While performing the operational checkout, numerous trainer indications do not reflect aircraft system operation.

Upgrade to modify trainer to reflect aircraft operation, and make associated updates to trainer Technical Order (T.O.).

- Manifold gage drive circuits (Flight Engineer Station – Panel 1). Manifold gage indication is not consistent with trainer T.O. or aircraft. Modify manifold gage drive circuits to reflect proper pressure readings depending on the bleed air source and to indicate pressure drops when air load is applied. Manifold pressure should be 35 to 45 psi when APU is supplying the bleed air. Manifold pressure should be 80 psi when engines are supplying the bleed air. Pressure reading should show a decrease of approximately 10 to 15 psi when air conditioning is applied. Also the system needs to be modified to provide a realistic bleed down. Currently manifold pressure drops rapidly when the bleed air sources are isolated. On the aircraft, the bleed down limits is 30 psi to 15 psi in no less than 30 seconds. Modify trainer so that both the left and right manifold pressure drops for demonstration of the pressure augmenter valve. Currently only the left manifold pressure indication drops during the pressure augmenter valve demonstration.
- Auxiliary Power Unit (APU) powered simulation. The bleed air switches cannot be put in proper aircraft position for the air conditioning check because the trainer only simulates system operations while being powered by the aircraft engines. Upgrade to incorporate a simulation for system operation while being powered by an APU. Modify trainer to allow the instructor to control what source is supplying the bleed air. Currently the trainer is set up that number 1 engine is constantly supplying bleed air. Install a switch for each engine (total of 4 engines) that can be used to tell the trainer that either the engine is supplying or not supplying the bleed air (much like the APU simulation switches that are already installed on the trainer).
- Air conditioning shutoff valve. Upgrade to replace representation of the troop compartment air conditioning shutoff valve with an actual valve. The T.O. operational checkout requires checking the position of the troop compartment air conditioning valve, but the animated representation of the valve does not display valve position.

3. Aircraft Electrical System Trainer Upgrade
   - Pilot's Circuit Breaker (CB) Panel. Upgrade to result in accurate representation of TCTO 1C-5A-606 by adding CB references to the Pilot's CB Panel. The CB panel is not concurrent with the aircraft.
   - The FREQ and VOLT gauges do not indicate "0" when the APU "GEN OUT" light is illuminated. Modify the trainer so that when conditions exists that will cause the "GEN OUT" light to illuminate the FREQ and VOLT gauges will indicate "0".

4. Fire Suppression System Trainer Upgrade

- Fire Detector System Trainer. On Travis AFB trainer, correctly install TCTO 1C-5-552 to align trainer with aircraft system. TCTO 1C-5-552, Pylon Fire Safety Improvements, was installed incorrectly on Travis AFB trainer.
- Control unit circuit cards. Redesign and fabricate circuit cards to improve reliability.
- Engine and pylon flame detector. Add aircraft vehicle equipment engine and pylon flame detector.
- Animated panel. Modify animated panel to correctly display the routing of the engine and pylon optical fire detector wiring. This should be done the same as the existing animated panels for the engine fire detectors.
- Rack system of engine fire detector sensors. Upgrade to match the current aircraft engine configuration, including the addition of the pylon eyebrow loop, the aft silver loop and rack, and the silver and copper rack with elements.

5. Thrust Reverser System Trainer Upgrade
   - Upgrade to the C-5B configuration in the following areas:
     - Harness wiring (includes connector pin-outs)
     - Trainer A-frame

6. Aircraft Aerial Refueling Receptacle Trainer (AARRT) Upgrade
   - Fuel valve assemblies. On Travis AFB trainer, modify simulated fuel isolation valve assemblies and one fuel drain valve lever assembly in a manner consistent with Dover AFB resolution, and to overcome intermittent operation problems.
   - Instructor station. Upgrade the instructor station computer configuration to overcome supportability problems. Reconfigure the instructor station installing a more compact console.
   - Disconnect light simulation. Modify the trainer to reflect aircraft system operation. The system "Ready Light" does not illuminate as per aircraft after operator initiated disconnect.
   - Flight engineers panel. Convert flight engineers panel to C-5B configuration